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Vocabulary Builder Reference from...

Pedro Brugarolas: Why do hospitals have particle accelerators? | TED Talk

https://www.ted.com/talks/pedro_brugarolas_why_do_hospitals_have_particle_accelerators

All Words

IMPORTANT

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Session 1: Word List

syringe

n. a device used for injecting or withdrawing fluids from the body, consisting of a tube and a plunger that creates a vacuum or expels the fluid

synonym: needle, injector, shot

(1) **syringe** needle, (2) **syringe** injection

Addicts often share dirty **syringes**, putting themselves at risk for disease.

radioactive

adj. emitting powerful and dangerous energy when the nuclei (= central parts) of atoms are broken up

synonym: dangerous, contaminated, emanating

(1) **radioactive** decay, (2) **radioactive** isotope

The **radioactive** material was carefully stored in a lead-lined container.

glucose

n. a type of sugar that is found in plants, especially fruit, and is an essential energy source in living things

synonym: sugar, blood sugar

(1) blood **glucose** test, (2) **glucose** level

The doctor injected **glucose** into his patient's veins.

inject

v. to put a liquid such as a drug or other substance into a person's or an animal's body using a needle and syringe

(= small tube)

synonym: shoot, infiltrate, insinuate

(1) **inject** under the skin, (2) **inject** a personal opinion into a debate

Let's try to **inject** a bit of enthusiasm into your performance.

patient

n. a person who is receiving medical treatment, care, or attention from a healthcare professional, such as a doctor, nurse, or therapist; a personal quality or characteristic

synonym: client, recipient, subject

(1) **patient** in the hospital, (2) **patient** with weight loss

The doctor carefully examined the **patient's** medical history.

cancer

n. abnormal growth of cells that can invade and destroy surrounding tissues and organs; a disease characterized by the uncontrolled growth and spread of abnormal cells

synonym: tumor, carcinoma, malignancy

(1) **cancer** diagnosis, (2) **cancer** research

Breast **cancer** is the most common type of cancer in women.

pet

n. an animal that you have at home as a companion and treated kindly

(1) a **pet** bird, (2) a teacher's **pet**

I have a parrot as a **pet**.

scan

v. to examine something hastily, with the eyes or with a machine, to get information

synonym: look over, scrutinize, browse

(1) **scan** the face of the man, (2) **scan** a document into PDF

She stood on the podium and **scanned** an audience.

circulate

v. to move continuously or freely around a place or closed system

synonym: flow, disperse, rotate

(1) **circulate** a rumor, (2) **circulate** an agenda before the

meeting

The fan **circulates** the air in the room quickly.

tumor

n. a mass of diseased tissue that forms when cells in the body divide and grow in an uncontrolled way

synonym : neoplasm, mass, lump

(1) **tumor** growth, (2) **tumor** at remote sites

The patient was diagnosed with a **tumor** in her lung.

beacon

n. a light or other visible object serving as a signal, guide, or warning

synonym : lighthouse, guidepost, marker

(1) an aerial **beacon**, (2) **beacon** of hope

The lighthouse served as a **beacon** to guide ships safely into port.

tracer

n. a substance or device that makes something visible or distinguishable by leaving a visible mark or path behind it; a person or thing that traces, tracks, or follows; (of graphics) a tool or technique used to produce a precise outline of an image

synonym : detector, tracker

(1) radioactive **tracer**, (2) biological **tracer**

The **tracer** gun fired a bright light that helped the hunters find their prey in the dark.

remarkable

adj. worthy of attention because unusual or special

synonym : outstanding, exceptional, extraordinary

(1) **remarkable** achievement, (2) the **remarkable** breadth of knowledge

The election was a **remarkable** success for the Whigs.

medical

adj. relating to the treatment of illness or injuries; relating to the practice of medicine

synonym : health, disease, treatment

(1) a **medical** opinion, (2) temporary **medical** treatment

The **medical** team worked quickly to save the patient's life.

diagnose

v. to determine or distinguish the nature of a problem or an illness through a careful analysis

synonym: identify, analyze, interpret

(1) **diagnose** the problem, (2) **diagnose** with CT scans

This device is used to **diagnose** brain cancer and other tumors.

particle

n. a small piece of something; a word or piece of a term with grammatical function but little or no significance

synonym: atom, grain, bit

(1) charged **particle**, (2) **particle** energy

We can calculate the position of the **particles** statistically.

accelerate

v. to make something faster or earlier; to cause to develop or progress more quickly

synonym: speed up, quicken, rev

(1) **accelerate** a chemical reaction, (2) **accelerate** the car

The government tried to **accelerate** the commercialization of this development.

cyclotron

n. a type of particle accelerator used to produce high-energy, charged particles for medical, scientific, or industrial purposes, often used in medical imaging or radiation therapy

synonym: particle accelerator, atom smasher

(1) **cyclotron-produced** radiotracers, (2) medical **cyclotron**

The **cyclotron** facility at the university is one of the most advanced in the country.

bunker

n. a concrete shelter or underground room, typically for storing ammunition or protecting people from enemy fire; a hazard on a golf course; a large container for storing fuel

synonym: shelter, fortification, defense

(1) coal **bunker**, (2) **bunker** facility

The soldiers took cover in the dug-out **bunker** during the bombing.

electromagnetic

adj. of or relating to the magnetism produced by electric charge in motion

(1) **electromagnetic** radiation, (2) **electromagnetic** properties

His hypothesis concerns the role of an **electromagnetic** field in human health.

propel

v. to move, drive or push something forward or in a particular direction, often with a lot of force

synonym : drive, push, move

(1) **propel** growth, (2) **propel** the ship

An increase in employment helps **propel** economic growth.

proton

n. a very small particle with a positive charge equal to the negative charge of an electron that forms part of the nucleus of all atoms

(1) **proton** decay, (2) **proton** conductivity

The solar wind is composed almost entirely of electrons and **protons**.

spiral

n. a curve that coils around a central point and gets progressively farther away from it as it goes around

synonym : coil, helix, twist

(1) **spiral** staircase, (2) **spiral** design

The leaves of the fern were arranged in a **spiral** pattern.

maximum

adj. the largest or greatest amount or value attainable or attained

synonym : peak, top, highest

(1) **maximum** limit, (2) the **maximum** speed

The **maximum** temperature recorded this summer was higher than average.

oxygen

n. the chemical element with the symbol O that is present in air and water and is necessary for people, animals, and plants to live

(1) the hydrogen binds the **oxygen**, (2) lack of **oxygen**

The passenger grabbed for the **oxygen** mask.

slam

v. to shut a door or window noisily; to strike something violently or noisily

synonym: bang, crash, shut

(1) **slam** the door, (2) **slam** the book against a wall

She **slammed** the door shut, angry at the person on the other side.

atom

n. the smallest unit of ordinary matter that forms a chemical element, composed of a nucleus and one or more electrons bound to the nucleus

synonym: particle, element, fraction

(1) oxygen **atom**, (2) neutral hydrogen **atoms**

The outermost electron shell of an **atom** determines its chemical characteristics.

atomic

adj. of or relating to atom (= the smallest component of an element)

synonym: tiny, microscopic, nuclear

(1) **atomic** nucleus, (2) **atomic** bomb

Carbon has an **atomic** mass of 12.

neutron

n. a subatomic particle with no electric charge that is present in all atomic nuclei except those of ordinary hydrogen

(1) **neutron** acceleration, (2) the antiparticle of a **neutron**

A **neutron** star is incredibly dense and has a strong gravitational pull.

isotope

n. a variation of an element that has the same number of protons in its nucleus but a different number of neutrons, resulting in a different atomic mass and often different

physical or chemical properties

synonym: variant, nuclide, radioisotope

(1) radioactive **isotope**, (2) stable **isotope**

The **isotope** carbon-14 is commonly used in radiocarbon dating of fossils.

detect

v. to find or recognize something, especially something difficult to see, hear, etc.

synonym: catch, observe, notice

(1) **detect** a bad event, (2) **detect** smuggling across borders

The security camera has **detected** four intruders.

fluorine

n. a chemical element with the symbol F and atomic number 9 that is the most reactive of all known elements and exists in nature only in combination with other elements, typically in the form of fluoride compounds

synonym: F, halogen, gas

(1) **fluorine** ion, (2) **fluorine** compound

Some plastics are made using **fluorine-based** compounds.

decay

n. the process or state of rotting or decomposition by natural causes such as the action of bacteria and fungi; (verb) to rot or decompose through natural causes

synonym: corrosion, decomposition, deterioration

(1) radioactive **decay**, (2) prevent tooth **decay**

The dead body was in an advanced state of **decay**.

tick

n. a light, sharp, repetitive sound or action; a mark indicating that something is correct or has been done; any of two families of small parasitic arachnids with barbed proboscis

synonym: sound, noise, beat

(1) **tick** of the clock, (2) **tick** fever

I always put a **tick** mark next to the items on my grocery list after buying them.

disease

n. a disorder or illness that affects the body or mind, often characterized by specific symptoms or abnormal functioning of organs or systems

synonym : illness, ailment, affliction

(1) **disease** prevention, (2) **disease** control

The doctor diagnosed him with a rare **disease** that had no known cure.

chemical

adj. relating to or connected with chemistry;

synonym : chemic, synthetic

(1) toxic **chemicals**, (2) a **chemical** compound

The firm has grown into a large **chemical** manufacturing.

reaction

n. a response that reveals a person's feelings or attitude; (in chemistry) a process in which one or more substances are changed into others

synonym : response, reply, answer

(1) chemical **reaction**, (2) trigger a **reaction**

There was a chemical **reaction** of the lime with the groundwater.

attach

v. to fasten, join, or connect one thing to another

synonym : fix, fasten, bind

(1) **attach** firmly, (2) **attach** a file to an e-mail

He does not **attach** importance to these rumors.

molecule

n. a group of two or more atoms held together by attractive forces known as chemical bonds

synonym : particle, element, atom

(1) small **molecules**, (2) **molecule** behavior

The shape of the DNA **molecule** is a double helix.

radiotracer

n. a molecule or substance that is labeled with a radioactive isotope and can be used to visualize or track the movement, absorption, or distribution of that substance in the body or other biological system

(1) **radiotracer** imaging, (2) PET **radiotracer**

The doctor injected a **radiotracer** substance into the patient's bloodstream to track the blood flow.

identity

n. the fact of being who or what somebody or something is; the features, emotions, or ideas that distinguish persons from one another

synonym: character, personality, individuality

(1) mistaken **identity**, (2) **identity** as an individual

The terrorist's **identity** remains unknown.

observe

v. to watch or notice something carefully, often to gather information or insights; to take note of something or someone; to celebrate or commemorate a special event or occasion

synonym: watch, monitor, scrutinize

(1) **observe** a tradition, (2) **observe** wildlife

It is important to **observe** safety procedures in the workplace to prevent accidents.

consume

v. to spend something, especially fuel, energy, or time, in a large amount

synonym: absorb, ingest, use up

(1) **consume** a large of alcohol, (2) **consume** electricity

A smaller car will **consume** less fuel.

presence

n. the fact or state that someone or something exists, occurs, or is present

synonym: existence, actuality, fact

(1) the evidence of the **presence**, (2) his majestic **presence**

The path to a solid online **presence** necessitates a high technical ability.

locate

v. to specify or determine the exact position of someone or something

synonym: discover, find, place

(1) **locate** a missing pet, (2) **locate** a tumor

The robot can accurately **locate** construction material.

infection

n. a condition in which pathogenic microorganisms or viruses have entered the body

synonym: contagion, disease, transmission

(1) a bacterial **infection**, (2) treat the **infection** with antibiotics

Hospitals must meet various standards to prevent nosocomial **infections**.

brain

n. the organ inside the head that is responsible for one's movement, thought, memory, and feeling

synonym: intellect, mind, encephalon

(1) basic **brain** function, (2) permanent **brain** damage

X-rays revealed a small tumor in his **brain**.

function

n. the purpose or use of an object, system, or process; a particular activity or operation that is designed to serve a specific purpose; a mathematical concept that describes a relationship between two sets of values, called the input and output sets; (verb) to operate or work in a specific way, or to perform a particular task or purpose

synonym: purpose, mapping, job

(1) **function** properly, (2) immune **function**

The brain is an incredibly complex organ that controls the body's **function**.

dementia

n. a severe decline in cognitive function, especially memory, as a result of disease or injury

synonym: cognitive decline, memory loss, Alzheimer's disease

(1) **dementia** patients, (2) probably have **dementia**

The study found that regular exercise can help to prevent the onset of **dementia** in older age.

circulatory

adj. relating to the system that moves blood through the body, which includes the heart, arteries, and veins

synonym: circulative, rotating

(1) a **circulatory** disease, (2) cause **circulatory** failure shock

The **circulatory** system of the animal is also responsible for heat transportation.

protein

n. a molecule made up of a long chain of amino acids, which is essential for the structure and function of the body's tissues

(1) stress **protein**, (2) **protein** synthesis

The body needs a certain amount of **protein** to build and repair tissues.

circulation

n. the movement of blood through the body or of a fluid through a system; the number of copies of a newspaper or magazine that are sold

synonym: flow, movement, dissemination

(1) lymphatic **circulation**, (2) **circulation** of money

The **circulation** of the magazine has been steadily declining.

positron

n. an antiparticle of the electron with a positive charge that has the same mass as the electron but an opposite charge

synonym: antielectron, antiparticle, positronium

(1) **positron** emission, (2) **positron** annihilation

Positron emission tomography, or PET, is a medical imaging technique.

emission

n. the act of production or sending out gas, heat, light, etc.

synonym: emanation, radiation, discharge

(1) global **emissions** of greenhouse gases, (2) the **emission** of light

There are five distinct **emissions** at five unique wavelengths.

tomography

n. a diagnostic imaging technique used to produce detailed images of structures inside the body, typically by using X-rays, CT scans, or ultrasound

synonym: imaging, scanning, x-ray

(1) acoustic **tomography**, (2) **tomography** image

The **tomography** scan showed a clear image of the patient's

internal organs.

radiation

n. the energy that comes from a nuclear reaction in the form of rays, waves, or particles and that can be hazardous to health

synonym : dissemination, emission, irradiation

(1) exposure to **radiation**, (2) electromagnetic **radiation**
He tried every possible treatment, including chemotherapy and **radiation** therapy.

emit

v. to give off or send out something such as light, heat, sound, gas, etc.

synonym : give off, radiate, expel

(1) **emit** a gamma ray, (2) **emit** air pollution
During the unloading, the container box **emits** a clicking sound.

essentially

adv. relating to the essential features or concepts of anything

synonym : fundamentally, basically, virtually

(1) **essentially** correct, (2) become **essentially** same
Essentially, a society is an organism.

electron

n. a tiny particle with the negative electrical charge

synonym : negatron

(1) flow of **electrons**, (2) beam of **electrons**
The outermost **electron** shell determines the chemical properties of an atom.

collide

v. to hit something violently when moving

synonym : clash, slam, contradict

(1) **collide** head-on, (2) **collide** in midair
The interests of the two countries **collide**.

surround

v. to be all around something or somebody

synonym : encircle, encompass, envelop

(1) **surround** a town, (2) a stone wall **surrounds** the palace

On three sides, mountains **surround** the settlement.

nuclear

adj. of or relating to or constituting the nucleus of an atom; deriving destructive energy from the release of atomic energy

synonym : atomic

(1) **nuclear** fusion, (2) use of **nuclear** power

Many countries have now agreed to a treaty banning the use of **nuclear** weapons.

mass

n. a large amount of a substance with no definite shape or form; a large number of people or things grouped or crowded together

synonym : abundance, crowd, mob

(1) a **mass** of molten rock, (2) critical **mass**

The **mass** of people who do not own property is politically impotent.

convert

v. to have a talk with someone; (adjective) reversed in order, relation, or action

synonym : alter, remake, transform

(1) **convert** fat into energy, (2) **convert** base 10 to base 16

I want to **convert** my sadness into strength.

photon

n. a unit or quantum of electromagnetic energy, typically regarded as a particle that is the basic constituent of all light and other forms of electromagnetic radiation

synonym : particle, quantum, light

(1) **photon** emission, (2) **photon** energy

Infrared cameras detect **photons** in the infrared range of the electromagnetic spectrum.

X-ray

n. a type of electromagnetic radiation that has a wavelength shorter than visible light allowing hidden objects such as bones and organs inside the body to be photographed

synonym : roentgenogram, photon radiography

(1) **X-ray** scan, (2) an **X-ray** of arteries

The doctor ordered an **X-ray** to see if there was any damage to the bones.

opposition

n. the act of disagreeing or resisting; the state of strong disagreement

synonym: resistance, hostility, antagonism

(1) **opposition** campaign, (2) meet with **opposition**

The **opposition** party strongly disagreed with the government's proposed legislation.

array

n. a large group or collection of things or people, especially one that is impressive or attractive

synonym: collection, display, batch

(1) a two-dimensional **array**, (2) an **array** of troops

The customer on the Internet has to choose one from a formidable **array** of products.

software

n. a set of computer programs and associated documentation and data for doing particular computational jobs

synonym: program, system, operating system

(1) **software** architect, (2) copyrighted **software**

The company specializes in both hardware and **software**.

estimate

v. to guess or calculate the cost, size, value, etc. of something

synonym: calculate, gauge, evaluate

(1) **estimate** a fair value, (2) **estimate** this chicken to weigh three pounds

We **estimated** the season's total trade deficit at \$50 billion.

collision

n. an instance of two or more objects or entities crashing into each other, usually resulting in damage, impact, or conflict

synonym: crash, impact, smash

(1) **collision** detection, (2) come into **collision** with my

friend

The **collision** of tectonic plates can result in new mountain ranges, such as the Himalayas or the Alps.

distribute

v. to give something to a large number of individuals, or to spread or furnish something

synonym: broadcast, disperse, hand out

(1) **distribute** wealth evenly, (2) **distribute** video content

His estate was **distributed** to his sons.

spot

n. a particular location or place; a small round or roundish area, differing in color or feels from the surface around it

synonym: dot, mark, place

(1) beauty **spot**, (2) a **spot** on his honor

This remote **spot** is rarely visited.

revolution

n. a large-scale attempt to overthrow the government of a country, often using violence or war;

synonym: coup, innovation, rebellion

(1) beginning of the industrial **revolution**, (2) a political **revolution**

The **revolution** by the citizen resulted in a redistribution of wealth.

Alzheimer

n. a neurodegenerative disease that causes memory loss, cognitive decline, and behavioral issues; is the most common cause of dementia in older adults

synonym: dementia, memory loss, cognitive decline

(1) **Alzheimer's** brain, (2) **Alzheimer's** risk factors

My grandmother has **Alzheimer's** disease requires special care and attention from her caregivers.

amyloid

n. a type of protein that can accumulate abnormally in various tissues and organs in the body and is linked to various diseases, including Alzheimer's disease

synonym: protein deposit, plaque buildup

(1) **amyloid** beta, (2) **amyloid** accumulation

Alzheimer's disease is characterized by the buildup of **amyloid** plaques in the brain.

telltale

adj. revealing or betraying information or evidence; serving as a sign or indicator of something

synonym: revealing, indicative, suggestive

(1) **telltale** evidence, (2) **telltale** heart

The **telltale** signs of a dishonest employee were missing files and constant delay.

buildup

n. the accumulation or increase of something over time

synonym: accumulation, increase, growth

(1) lactic acid **buildup**, (2) huge military **buildup**

The **buildup** of stress over time can lead to health problems.

confirm

v. to support or establish the truth or certainty of something previously believed or suspected to be the case

synonym: affirm, verify, assure

(1) **confirm** the diagnosis, (2) **confirm** a transaction

Please write to **confirm** your reservation.

autopsy

n. a medical examination performed on a dead body to determine the cause of death or identify any underlying medical conditions or injuries; a postmortem examination or necropsy (in animals)

synonym: postmortem examination, necropsy, examination

(1) forensic **autopsy**, (2) perform an **autopsy**

The **autopsy** report revealed that the cause of death was a heart attack.

develop

v. to grow or expand; to improve or refine through a process of progress and refinement, often to achieve greater sophistication or complexity; to elaborate or add detail to something that is in the process of being created

synonym: evolve, progress, advance

(1) **develop** a strategy, (2) **develop** a skill

We must **develop** a new system to streamline our workflow and increase efficiency.

expand

v. to increase or to make something greater in size, number, or importance

synonym: extend, grow, boost

(1) **expand** a lineup, (2) **expand** agricultural output

They hope to **expand** their business worldwide.

possibility

n. a chance that something may happen or be true

synonym: chance, prospect, likelihood

(1) **possibility** for growth, (2) **possibility** of a major earthquake

The **possibility** of getting the disease will drastically increase.

ion

n. an atom or molecule that has a positive or negative electrical charge caused by its losing or gained one or more electrons

(1) **ion** channel, (2) rechargeable lithium- **ion** battery

The increased concentration of **ion** of hydrogen ions in an aqueous solution makes it more acidic.

comparable

adj. able to link the similarities or differences with others; similar or equivalent to someone or something

synonym: equal, commensurate, similar

(1) **comparable** sales, (2) a **comparable** amount of energy

Humans and apes have **comparable** anatomical structures.

exposed

adj. having no protection or shield from something, such as bad weather, attack, or criticism

synonym: endangered, revealed, disclosed

(1) **exposed** to radiation, (2) an **exposed** rock

Tech companies often employ **exposed** ducts and other materials in their office interiors.

radon

n. a chemical element with the atomic number 86 and symbol Rn that is a radioactive gas and comes from the decay of uranium in rocks and soil, and that is colorless, odorless, and tasteless and can cause cancer if inhaled in large amounts

synonym : Rn

(1) **radon** gas, (2) **radon** poisoning

Radon exposure is the leading cause of lung cancer among non-smokers.

pilot

n. a person who flies an aircraft, especially as a job; a person qualified to guide ships through a difficult area of water

synonym : aviator, flyer, chief

(1) a test **pilot**, (2) **pilot** production

The **pilot** exercised great care in landing.

rack

n. a framework or support structure used to hold or display objects; a set of interconnected shelves or compartments used for storage; a source of torture, distress, or mental anguish

synonym : shelf, stand, frame

(1) clothing **rack**, (2) spice **rack**

I need to buy a new coat **rack** to organize my winter jackets.

cosmic

adj. relating to the universe or cosmos; vast or limitless

synonym : astronomical, celestial, outer-space

(1) second **cosmic** velocity, (2) **cosmic** background radiation

Cosmic rays are high-energy particles that originate from outside the solar system.

transatlantic

adj. relating to or situated on the other side of the Atlantic Ocean, especially about travel communication or cultural exchange between Europe and North America

synonym : intercontinental, across-the-pond

(1) **transatlantic** cable, (2) **transatlantic** partnership

Transatlantic cooperation is important for global security and stability.

flee

v. to leave by running away, especially out of fear or danger

synonym: exit, escape, run away

(1) **flee** their homes, (2) **flee** abroad

It is a basic instinct to **flee** from a dangerous situation.

Session 2: Spelling

- | | |
|--|---|
| 1. rad_____ve isotope | <i>adj.</i> emitting powerful and dangerous energy when the nuclei (= central parts) of atoms are broken up |
| 2. pi__t production | <i>n.</i> a person who flies an aircraft, especially as a job; a person qualified to guide ships through a difficult area of water |
| 3. ra__n gas | <i>n.</i> a chemical element with the atomic number 86 and symbol Rn that is a radioactive gas and comes from the decay of uranium in rocks and soil, and that is colorless, odorless, and tasteless and can cause cancer if inhaled in large amounts |
| 4. ex___d a lineup | <i>v.</i> to increase or to make something greater in size, number, or importance |
| 5. electromagnetic ra_____on | <i>n.</i> the energy that comes from a nuclear reaction in the form of rays, waves, or particles and that can be hazardous to health |
| 6. co___c background radiation | <i>adj.</i> relating to the universe or cosmos; vast or limitless |
| 7. beginning of the industrial
rev_____on | <i>n.</i> a large-scale attempt to overthrow the government of a country, often using violence or war; |
| 8. lactic acid bu_____p | <i>n.</i> the accumulation or increase of something over time |
| 9. opp_____on campaign | <i>n.</i> the act of disagreeing or resisting; the state of strong disagreement |

ANSWERS: 1. radioactive, 2. pilot, 3. radon, 4. expand, 5. radiation, 6. cosmic, 7. revolution, 8. buildup, 9. opposition

10. fu____on properly
- n.* the purpose or use of an object, system, or process; a particular activity or operation that is designed to serve a specific purpose; a mathematical concept that describes a relationship between two sets of values, called the input and output sets; (verb) to operate or work in a specific way, or to perform a particular task or purpose
11. pr____n synthesis
- n.* a molecule made up of a long chain of amino acids, which is essential for the structure and function of the body's tissues
12. fl____ne ion
- n.* a chemical element with the symbol F and atomic number 9 that is the most reactive of all known elements and exists in nature only in combination with other elements, typically in the form of fluoride compounds
13. probably have de____ia
- n.* a severe decline in cognitive function, especially memory, as a result of disease or injury
14. gl____e level
- n.* a type of sugar that is found in plants, especially fruit, and is an essential energy source in living things
15. de____p a skill
- v.* to grow or expand; to improve or refine through a process of progress and refinement, often to achieve greater sophistication or complexity; to elaborate or add detail to something that is in the process of being created

ANSWERS: 10. function, 11. protein, 12. fluorine, 13. dementia, 14. glucose, 15. develop

16. su____nd a town *v.* to be all around something or somebody
17. t__k of the clock *n.* a light, sharp, repetitive sound or action; a mark indicating that something is correct or has been done; any of two families of small parasitic arachnids with barbed proboscis
18. ra__n poisoning *n.* a chemical element with the atomic number 86 and symbol Rn that is a radioactive gas and comes from the decay of uranium in rocks and soil, and that is colorless, odorless, and tasteless and can cause cancer if inhaled in large amounts
19. ele_____tic properties *adj.* of or relating to the magnetism produced by electric charge in motion
20. di_____e prevention *n.* a disorder or illness that affects the body or mind, often characterized by specific symptoms or abnormal functioning of organs or systems
21. bu____r facility *n.* a concrete shelter or underground room, typically for storing ammunition or protecting people from enemy fire; a hazard on a golf course; a large container for storing fuel
22. the rem_____le breadth of knowledge *adj.* worthy of attention because unusual or special
23. ne_____n acceleration *n.* a subatomic particle with no electric charge that is present in all atomic nuclei except those of ordinary hydrogen

ANSWERS: 16. surround, 17. tick, 18. radon, 19. electromagnetic, 20. disease, 21. bunker, 22. remarkable, 23. neutron

24. his majestic pr_____ce *n.* the fact or state that someone or something exists, occurs, or is present
25. ele_____tic radiation *adj.* of or relating to the magnetism produced by electric charge in motion
26. an ar__y of troops *n.* a large group or collection of things or people, especially one that is impressive or attractive
27. pr___l the ship *v.* to move, drive or push something forward or in a particular direction, often with a lot of force
28. tu__r at remote sites *n.* a mass of diseased tissue that forms when cells in the body divide and grow in an uncontrolled way
29. sp___l staircase *n.* a curve that coils around a central point and gets progressively farther away from it as it goes around
30. dis_____te wealth evenly *v.* to give something to a large number of individuals, or to spread or furnish something
31. a political rev_____on *n.* a large-scale attempt to overthrow the government of a country, often using violence or war;
32. ex_____d to radiation *adj.* having no protection or shield from something, such as bad weather, attack, or criticism
33. ca___r research *n.* abnormal growth of cells that can invade and destroy surrounding tissues and organs; a disease characterized by the uncontrolled growth and spread of abnormal cells

ANSWERS: 24. presence, 25. electromagnetic, 26. array, 27. propel, 28. tumor, 29. spiral, 30. distribute, 31. revolution, 32. exposed, 33. cancer

34. a bacterial in_____on *n.* a condition in which pathogenic microorganisms or viruses have entered the body
35. PET rad_____er *n.* a molecule or substance that is labeled with a radioactive isotope and can be used to visualize or track the movement, absorption, or distribution of that substance in the body or other biological system
36. oxygen a__m *n.* the smallest unit of ordinary matter that forms a chemical element, composed of a nucleus and one or more electrons bound to the nucleus
37. co_____t base 10 to base 16 *v.* to have a talk with someone; (adjective) reversed in order, relation, or action
38. co_____e in midair *v.* to hit something violently when moving
39. s__n the face of the man *v.* to examine something hastily, with the eyes or with a machine, to get information
40. an ex_____d rock *adj.* having no protection or shield from something, such as bad weather, attack, or criticism
41. so_____re architect *n.* a set of computer programs and associated documentation and data for doing particular computational jobs
42. co_____t fat into energy *v.* to have a talk with someone; (adjective) reversed in order, relation, or action
43. trigger a re_____on *n.* a response that reveals a person's feelings or attitude; (in chemistry) a process in which one or more substances are changed into others

ANSWERS: 34. infection, 35. radiotracer, 36. atom, 37. convert, 38. collide, 39. scan, 40. exposed, 41. software, 42. convert, 43. reaction

44. pos_____ty for growth *n.* a chance that something may happen or be true
45. flow of el_____ons *n.* a tiny particle with the negative electrical charge
46. immune fu_____on *n.* the purpose or use of an object, system, or process; a particular activity or operation that is designed to serve a specific purpose; a mathematical concept that describes a relationship between two sets of values, called the input and output sets; (verb) to operate or work in a specific way, or to perform a particular task or purpose
47. de_____p a strategy *v.* to grow or expand; to improve or refine through a process of progress and refinement, often to achieve greater sophistication or complexity; to elaborate or add detail to something that is in the process of being created
48. am_____d beta *n.* a type of protein that can accumulate abnormally in various tissues and organs in the body and is linked to various diseases, including Alzheimer's disease
49. at___c nucleus *adj.* of or relating to atom (= the smallest component of an element)
50. lo___e a missing pet *v.* to specify or determine the exact position of someone or something
51. beam of el_____ons *n.* a tiny particle with the negative electrical charge

ANSWERS: 44. possibility, 45. electron, 46. function, 47. develop, 48. amyloid, 49. atomic, 50. locate, 51. electron

52. an X-__y of arteries *n.* a type of electromagnetic radiation that has a wavelength shorter than visible light allowing hidden objects such as bones and organs inside the body to be photographed
53. di_____e control *n.* a disorder or illness that affects the body or mind, often characterized by specific symptoms or abnormal functioning of organs or systems
54. pa_____le energy *n.* a small piece of something; a word or piece of a term with grammatical function but little or no significance
55. exposure to ra_____on *n.* the energy that comes from a nuclear reaction in the form of rays, waves, or particles and that can be hazardous to health
56. de_____ia patients *n.* a severe decline in cognitive function, especially memory, as a result of disease or injury
57. X-__y scan *n.* a type of electromagnetic radiation that has a wavelength shorter than visible light allowing hidden objects such as bones and organs inside the body to be photographed
58. the hydrogen binds the ox___n *n.* the chemical element with the symbol O that is present in air and water and is necessary for people, animals, and plants to live
59. huge military bu_____p *n.* the accumulation or increase of something over time

ANSWERS: 52. X-ray, 53. disease, 54. particle, 55. radiation, 56. dementia, 57. X-ray, 58. oxygen, 59. buildup

60. sy____e injection *n.* a device used for injecting or withdrawing fluids from the body, consisting of a tube and a plunger that creates a vacuum or expels the fluid
61. temporary me____l treatment *adj.* relating to the treatment of illness or injuries; relating to the practice of medicine
62. toxic ch____als *adj.* relating to or connected with chemistry;
63. sy____e needle *n.* a device used for injecting or withdrawing fluids from the body, consisting of a tube and a plunger that creates a vacuum or expels the fluid
64. in____t under the skin *v.* to put a liquid such as a drug or other substance into a person's or an animal's body using a needle and syringe (= small tube)
65. lymphatic cir____on *n.* the movement of blood through the body or of a fluid through a system; the number of copies of a newspaper or magazine that are sold
66. po____on annihilation *n.* an antiparticle of the electron with a positive charge that has the same mass as the electron but an opposite charge
67. mistaken id____ty *n.* the fact of being who or what somebody or something is; the features, emotions, or ideas that distinguish persons from one another
68. forensic au____y *n.* a medical examination performed on a dead body to determine the cause of death or identify any underlying medical conditions or injuries; a postmortem examination or necropsy (in animals)

ANSWERS: 60. syringe, 61. medical, 62. chemical, 63. syringe, 64. inject, 65. circulation, 66. positron, 67. identity, 68. autopsy

69. f__e their homes *v.* to leave by running away, especially out of fear or danger
70. te____le heart *adj.* revealing or betraying information or evidence; serving as a sign or indicator of something
71. po____on emission *n.* an antiparticle of the electron with a positive charge that has the same mass as the electron but an opposite charge
72. di____se with CT scans *v.* to determine or distinguish the nature of a problem or an illness through a careful analysis
73. e__t a gamma ray *v.* to give off or send out something such as light, heat, sound, gas, etc.
74. ca____r diagnosis *n.* abnormal growth of cells that can invade and destroy surrounding tissues and organs; a disease characterized by the uncontrolled growth and spread of abnormal cells
75. com____le sales *adj.* able to link the similarities or differences with others; similar or equivalent to someone or something
76. co____e head-on *v.* to hit something violently when moving
77. prevent tooth de__y *n.* the process or state of rotting or decomposition by natural causes such as the action of bacteria and fungi; (verb) to rot or decompose through natural causes
78. acoustic tom____hy *n.* a diagnostic imaging technique used to produce detailed images of structures inside the body, typically by using X-rays, CT scans, or ultrasound

ANSWERS: 69. flee, 70. telltale, 71. positron, 72. diagnose, 73. emit, 74. cancer, 75. comparable, 76. collide, 77. decay, 78. tomography

79. at___h a file to an e-mail *v.* to fasten, join, or connect one thing to another
80. radioactive de___y *n.* the process or state of rotting or decomposition by natural causes such as the action of bacteria and fungi; (verb) to rot or decompose through natural causes
81. small mo_____les *n.* a group of two or more atoms held together by attractive forces known as chemical bonds
82. medical cy_____on *n.* a type of particle accelerator used to produce high-energy, charged particles for medical, scientific, or industrial purposes, often used in medical imaging or radiation therapy
83. a test pi___t *n.* a person who flies an aircraft, especially as a job; a person qualified to guide ships through a difficult area of water
84. cir_____on of money *n.* the movement of blood through the body or of a fluid through a system; the number of copies of a newspaper or magazine that are sold
85. s___m the door *v.* to shut a door or window noisily; to strike something violently or noisily
86. lo___e a tumor *v.* to specify or determine the exact position of someone or something
87. f___e abroad *v.* to leave by running away, especially out of fear or danger
88. a two-dimensional ar___y *n.* a large group or collection of things or people, especially one that is impressive or attractive

ANSWERS: 79. attach, 80. decay, 81. molecule, 82. cyclotron, 83. pilot, 84. circulation, 85. slam, 86. locate, 87. flee, 88. array

89. i_n channel *n.* an atom or molecule that has a positive or negative electrical charge caused by its losing or gained one or more electrons
90. mo_____le behavior *n.* a group of two or more atoms held together by attractive forces known as chemical bonds
91. ess_____ly correct *adv.* relating to the essential features or concepts of anything
92. blood gl_____e test *n.* a type of sugar that is found in plants, especially fruit, and is an essential energy source in living things
93. pa_____t in the hospital *n.* a person who is receiving medical treatment, care, or attention from a healthcare professional, such as a doctor, nurse, or therapist; a personal quality or characteristic
94. cy_____on-produced radiotracers *n.* a type of particle accelerator used to produce high-energy, charged particles for medical, scientific, or industrial purposes, often used in medical imaging or radiation therapy
95. an aerial be_____n *n.* a light or other visible object serving as a signal, guide, or warning
96. a p_t bird *n.* an animal that you have at home as a companion and treated kindly
97. di_____se the problem *v.* to determine or distinguish the nature of a problem or an illness through a careful analysis

ANSWERS: 89. ion, 90. molecule, 91. essentially, 92. glucose, 93. patient, 94. cyclotron, 95. beacon, 96. pet, 97. diagnose

98. a m__s of molten rock *n.* a large amount of a substance with no definite shape or form; a large number of people or things grouped or crowded together
99. become ess_____ly same *adv.* relating to the essential features or concepts of anything
100. ci_____te a rumor *v.* to move continuously or freely around a place or closed system
101. s__m the book against a wall *v.* to shut a door or window noisily; to strike something violently or noisily
102. t__k fever *n.* a light, sharp, repetitive sound or action; a mark indicating that something is correct or has been done; any of two families of small parasitic arachnids with barbed proboscis
103. radioactive tr____r *n.* a substance or device that makes something visible or distinguishable by leaving a visible mark or path behind it; a person or thing that traces, tracks, or follows; (of graphics) a tool or technique used to produce a precise outline of an image
104. ma_____m limit *adj.* the largest or greatest amount or value attainable or attained
105. ob_____e a tradition *v.* to watch or notice something carefully, often to gather information or insights; to take note of something or someone; to celebrate or commemorate a special event or occasion
106. beauty s__t *n.* a particular location or place; a small round or roundish area, differing in color or feels from the surface around it

ANSWERS: 98. mass, 99. essentially, 100. circulate, 101. slam, 102. tick, 103. tracer, 104. maximum, 105. observe, 106. spot

107. cause cir_____ry failure shock *adj.* relating to the system that moves blood through the body, which includes the heart, arteries, and veins
108. es_____te a fair value *v.* to guess or calculate the cost, size, value, etc. of something
109. a s__t on his honor *n.* a particular location or place; a small round or roundish area, differing in color or feels from the surface around it
110. basic br__n function *n.* the organ inside the head that is responsible for one's movement, thought, memory, and feeling
111. e__t air pollution *v.* to give off or send out something such as light, heat, sound, gas, etc.
112. charged pa_____le *n.* a small piece of something; a word or piece of a term with grammatical function but little or no significance
113. a me_____l opinion *adj.* relating to the treatment of illness or injuries; relating to the practice of medicine
114. clothing r__k *n.* a framework or support structure used to hold or display objects; a set of interconnected shelves or compartments used for storage; a source of torture, distress, or mental anguish
115. copyrighted so_____re *n.* a set of computer programs and associated documentation and data for doing particular computational jobs
116. come into co_____on with my friend *n.* an instance of two or more objects or entities crashing into each other, usually resulting in damage, impact, or conflict

ANSWERS: 107. circulatory, 108. estimate, 109. spot, 110. brain, 111. emit, 112. particle, 113. medical, 114. rack, 115. software, 116. collision

117. tra_____tic cable *adj.* relating to or situated on the other side of the Atlantic Ocean, especially about travel communication or cultural exchange between Europe and North America
118. global em_____ons of greenhouse gases *n.* the act of production or sending out gas, heat, light, etc.
119. te_____le evidence *adj.* revealing or betraying information or evidence; serving as a sign or indicator of something
120. chemical re_____on *n.* a response that reveals a person's feelings or attitude; (in chemistry) a process in which one or more substances are changed into others
121. ex_____d agricultural output *v.* to increase or to make something greater in size, number, or importance
122. the ma_____m speed *adj.* the largest or greatest amount or value attainable or attained
123. ph_____n energy *n.* a unit or quantum of electromagnetic energy, typically regarded as a particle that is the basic constituent of all light and other forms of electromagnetic radiation
124. biological tr_____r *n.* a substance or device that makes something visible or distinguishable by leaving a visible mark or path behind it; a person or thing that traces, tracks, or follows; (of graphics) a tool or technique used to produce a precise outline of an image

ANSWERS: 117. transatlantic, 118. emission, 119. telltale, 120. reaction, 121. expand, 122. maximum, 123. photon, 124. tracer

125. a ch____al compound *adj.* relating to or connected with chemistry;
126. be___n of hope *n.* a light or other visible object serving as a signal, guide, or warning
127. de___t a bad event *v.* to find or recognize something, especially something difficult to see, hear, etc.
128. rad_____er imaging *n.* a molecule or substance that is labeled with a radioactive isotope and can be used to visualize or track the movement, absorption, or distribution of that substance in the body or other biological system
129. permanent br__n damage *n.* the organ inside the head that is responsible for one's movement, thought, memory, and feeling
130. am_____d accumulation *n.* a type of protein that can accumulate abnormally in various tissues and organs in the body and is linked to various diseases, including Alzheimer's disease
131. pa_____t with weight loss *n.* a person who is receiving medical treatment, care, or attention from a healthcare professional, such as a doctor, nurse, or therapist; a personal quality or characteristic
132. at___h firmly *v.* to fasten, join, or connect one thing to another
133. rad_____ve decay *adj.* emitting powerful and dangerous energy when the nuclei (= central parts) of atoms are broken up

ANSWERS: 125. chemical, 126. beacon, 127. detect, 128. radiotracer, 129. brain, 130. amyloid, 131. patient, 132. attach, 133. radioactive

134. rem_____le achievement *adj.* worthy of attention because unusual or special
135. co_____e electricity *v.* to spend something, especially fuel, energy, or time, in a large amount
136. the antiparticle of a ne_____n *n.* a subatomic particle with no electric charge that is present in all atomic nuclei except those of ordinary hydrogen
137. Al_____er's brain *n.* a neurodegenerative disease that causes memory loss, cognitive decline, and behavioral issues; is the most common cause of dementia in older adults
138. pos_____ty of a major earthquake *n.* a chance that something may happen or be true
139. sp_____l design *n.* a curve that coils around a central point and gets progressively farther away from it as it goes around
140. pr_____l growth *v.* to move, drive or push something forward or in a particular direction, often with a lot of force
141. a cir_____ry disease *adj.* relating to the system that moves blood through the body, which includes the heart, arteries, and veins
142. co_____m a transaction *v.* to support or establish the truth or certainty of something previously believed or suspected to be the case
143. the evidence of the pr_____ce *n.* the fact or state that someone or something exists, occurs, or is present

ANSWERS: 134. remarkable, 135. consume, 136. neutron, 137. Alzheimer, 138. possibility, 139. spiral, 140. propel, 141. circulatory, 142. confirm, 143. presence

144. second co___c velocity *adj.* relating to the universe or cosmos; vast or limitless
145. a teacher's p_t *n.* an animal that you have at home as a companion and treated kindly
146. tom_____hy image *n.* a diagnostic imaging technique used to produce detailed images of structures inside the body, typically by using X-rays, CT scans, or ultrasound
147. coal bu___r *n.* a concrete shelter or underground room, typically for storing ammunition or protecting people from enemy fire; a hazard on a golf course; a large container for storing fuel
148. acc_____te a chemical reaction *v.* to make something faster or earlier; to cause to develop or progress more quickly
149. id_____ty as an individual *n.* the fact of being who or what somebody or something is; the features, emotions, or ideas that distinguish persons from one another
150. tu__r growth *n.* a mass of diseased tissue that forms when cells in the body divide and grow in an uncontrolled way
151. a stone wall su_____nds the palace *v.* to be all around something or somebody
152. ph___n emission *n.* a unit or quantum of electromagnetic energy, typically regarded as a particle that is the basic constituent of all light and other forms of electromagnetic radiation

ANSWERS: 144. cosmic, 145. pet, 146. tomography, 147. bunker, 148. accelerate, 149. identity, 150. tumor, 151. surround, 152. photon

153. es____te this chicken to weigh three pounds *v.* to guess or calculate the cost, size, value, etc. of something
154. de____t smuggling across borders *v.* to find or recognize something, especially something difficult to see, hear, etc.
155. at____c bomb *adj.* of or relating to atom (= the smallest component of an element)
156. critical m____s *n.* a large amount of a substance with no definite shape or form; a large number of people or things grouped or crowded together
157. the em____on of light *n.* the act of production or sending out gas, heat, light, etc.
158. stable is____e *n.* a variation of an element that has the same number of protons in its nucleus but a different number of neutrons, resulting in a different atomic mass and often different physical or chemical properties
159. Al____er's risk factors *n.* a neurodegenerative disease that causes memory loss, cognitive decline, and behavioral issues; is the most common cause of dementia in older adults
160. nu____r fusion *adj.* of or relating to or constituting the nucleus of an atom; deriving destructive energy from the release of atomic energy
161. neutral hydrogen a____ms *n.* the smallest unit of ordinary matter that forms a chemical element, composed of a nucleus and one or more electrons bound to the nucleus

ANSWERS: 153. estimate, 154. detect, 155. atomic, 156. mass, 157. emission, 158. isotope, 159. Alzheimer, 160. nuclear, 161. atom

162. meet with opp_____on *n.* the act of disagreeing or resisting; the state of strong disagreement
163. in____t a personal opinion into a debate *v.* to put a liquid such as a drug or other substance into a person's or an animal's body using a needle and syringe (= small tube)
164. fl_____ne compound *n.* a chemical element with the symbol F and atomic number 9 that is the most reactive of all known elements and exists in nature only in combination with other elements, typically in the form of fluoride compounds
165. use of nu_____r power *adj.* of or relating to or constituting the nucleus of an atom; deriving destructive energy from the release of atomic energy
166. co_____m the diagnosis *v.* to support or establish the truth or certainty of something previously believed or suspected to be the case
167. a com_____le amount of energy *adj.* able to link the similarities or differences with others; similar or equivalent to someone or something
168. perform an au_____y *n.* a medical examination performed on a dead body to determine the cause of death or identify any underlying medical conditions or injuries; a postmortem examination or necropsy (in animals)
169. tra_____tic partnership *adj.* relating to or situated on the other side of the Atlantic Ocean, especially about travel communication or cultural exchange between Europe and North America

ANSWERS: 162. opposition, 163. inject, 164. fluorine, 165. nuclear, 166. confirm, 167. comparable, 168. autopsy, 169. transatlantic

170. lack of ox___n *n.* the chemical element with the symbol O that is present in air and water and is necessary for people, animals, and plants to live
171. dis_____te video content *v.* to give something to a large number of individuals, or to spread or furnish something
172. spice r__k *n.* a framework or support structure used to hold or display objects; a set of interconnected shelves or compartments used for storage; a source of torture, distress, or mental anguish
173. pr___n decay *n.* a very small particle with a positive charge equal to the negative charge of an electron that forms part of the nucleus of all atoms
174. treat the in_____on with antibiotics *n.* a condition in which pathogenic microorganisms or viruses have entered the body
175. s__n a document into PDF *v.* to examine something hastily, with the eyes or with a machine, to get information
176. pr___n conductivity *n.* a very small particle with a positive charge equal to the negative charge of an electron that forms part of the nucleus of all atoms
177. acc_____te the car *v.* to make something faster or earlier; to cause to develop or progress more quickly

ANSWERS: 170. oxygen, 171. distribute, 172. rack, 173. proton, 174. infection, 175. scan, 176. proton, 177. accelerate

178. ob_____e wildlife *v.* to watch or notice something carefully, often to gather information or insights; to take note of something or someone; to celebrate or commemorate a special event or occasion
179. stress pr_____n *n.* a molecule made up of a long chain of amino acids, which is essential for the structure and function of the body's tissues
180. co_____e a large of alcohol *v.* to spend something, especially fuel, energy, or time, in a large amount
181. ci_____te an agenda before the meeting *v.* to move continuously or freely around a place or closed system
182. rechargeable lithium-i_n battery *n.* an atom or molecule that has a positive or negative electrical charge caused by its losing or gained one or more electrons
183. radioactive is_____e *n.* a variation of an element that has the same number of protons in its nucleus but a different number of neutrons, resulting in a different atomic mass and often different physical or chemical properties
184. co_____on detection *n.* an instance of two or more objects or entities crashing into each other, usually resulting in damage, impact, or conflict

ANSWERS: 178. observe, 179. protein, 180. consume, 181. circulate, 182. ion, 183. isotope, 184. collision

Session 3: Fill in the Blanks

1. Some plastics are made using _____ compounds.
 - n.* a chemical element with the symbol F and atomic number 9 that is the most reactive of all known elements and exists in nature only in combination with other elements, typically in the form of fluoride compounds

2. Many countries have now agreed to a treaty banning the use of _____ weapons.
 - adj.* of or relating to or constituting the nucleus of an atom; deriving destructive energy from the release of atomic energy

3. I want to _____ my sadness into strength.
 - v.* to have a talk with someone; (adjective) reversed in order, relation, or action

4. The security camera has _____ four intruders.
 - v.* to find or recognize something, especially something difficult to see, hear, etc.

5. The _____ by the citizen resulted in a redistribution of wealth.
 - n.* a large-scale attempt to overthrow the government of a country, often using violence or war;

6. The lighthouse served as a _____ to guide ships safely into port.
 - n.* a light or other visible object serving as a signal, guide, or warning

7. The _____ of getting the disease will drastically increase.
 - n.* a chance that something may happen or be true

8. _____ rays are high-energy particles that originate from outside the solar system.
 - adj.* relating to the universe or cosmos; vast or limitless

ANSWERS: 1. fluorine-based, 2. nuclear, 3. convert, 4. detected, 5. revolution, 6. beacon, 7. possibility, 8. Cosmic

9. The _____ of stress over time can lead to health problems.
n. the accumulation or increase of something over time
10. They hope to _____ their business worldwide.
v. to increase or to make something greater in size, number, or importance
11. We can calculate the position of the _____ statistically.
n. a small piece of something; a word or piece of a term with grammatical function but little or no significance
12. His hypothesis concerns the role of an _____ field in human health.
adj. of or relating to the magnetism produced by electric charge in motion
13. On three sides, mountains _____ the settlement.
v. to be all around something or somebody
14. It is important to _____ safety procedures in the workplace to prevent accidents.
v. to watch or notice something carefully, often to gather information or insights; to take note of something or someone; to celebrate or commemorate a special event or occasion
15. The firm has grown into a large _____ manufacturing.
adj. relating to or connected with chemistry;
16. There are five distinct _____ at five unique wavelengths.
n. the act of production or sending out gas, heat, light, etc.
17. _____ a society is an organism.
adv. relating to the essential features or concepts of anything

ANSWERS: 9. buildup, 10. expand, 11. particles, 12. electromagnetic, 13. surround, 14. observe, 15. chemical, 16. emissions, 17. Essentially,

18. The study found that regular exercise can help to prevent the onset of _____ in older age.
- n.* a severe decline in cognitive function, especially memory, as a result of disease or injury
19. The _____ exercised great care in landing.
- n.* a person who flies an aircraft, especially as a job; a person qualified to guide ships through a difficult area of water
20. The doctor injected a _____ substance into the patient's bloodstream to track the blood flow.
- n.* a molecule or substance that is labeled with a radioactive isotope and can be used to visualize or track the movement, absorption, or distribution of that substance in the body or other biological system
21. The _____ team worked quickly to save the patient's life.
- adj.* relating to the treatment of illness or injuries; relating to the practice of medicine
22. Tech companies often employ _____ ducts and other materials in their office interiors.
- adj.* having no protection or shield from something, such as bad weather, attack, or criticism
23. Infrared cameras detect _____ in the infrared range of the electromagnetic spectrum.
- n.* a unit or quantum of electromagnetic energy, typically regarded as a particle that is the basic constituent of all light and other forms of electromagnetic radiation
24. The _____ carbon-14 is commonly used in radiocarbon dating of fossils.
- n.* a variation of an element that has the same number of protons in its nucleus but a different number of neutrons, resulting in a different atomic mass and often different physical or chemical properties

ANSWERS: 18. dementia, 19. pilot, 20. radiotracer, 21. medical, 22. exposed, 23. photons, 24. isotope

25. The increased concentration ____ of hydrogen ions in an aqueous solution makes it more acidic.
- n.* an atom or molecule that has a positive or negative electrical charge caused by its losing or gained one or more electrons
26. A smaller car will _____ less fuel.
- v.* to spend something, especially fuel, energy, or time, in a large amount
27. An increase in employment helps _____ economic growth.
- v.* to move, drive or push something forward or in a particular direction, often with a lot of force
28. _____ cooperation is important for global security and stability.
- adj.* relating to or situated on the other side of the Atlantic Ocean, especially about travel communication or cultural exchange between Europe and North America
29. He does not _____ importance to these rumors.
- v.* to fasten, join, or connect one thing to another
30. The shape of the DNA _____ is a double helix.
- n.* a group of two or more atoms held together by attractive forces known as chemical bonds
31. The terrorist's _____ remains unknown.
- n.* the fact of being who or what somebody or something is; the features, emotions, or ideas that distinguish persons from one another
32. Carbon has an _____ mass of 12.
- adj.* of or relating to atom (= the smallest component of an element)

ANSWERS: 25. ion, 26. consume, 27. propel, 28. Transatlantic, 29. attach, 30. molecule, 31. identity, 32. atomic

33. She stood on the podium and _____ an audience.

- v.* to examine something hastily, with the eyes or with a machine, to get information

34. His estate was _____ to his sons.

- v.* to give something to a large number of individuals, or to spread or furnish something

35. The _____ system of the animal is also responsible for heat transportation.

- adj.* relating to the system that moves blood through the body, which includes the heart, arteries, and veins

36. The _____ report revealed that the cause of death was a heart attack.

- n.* a medical examination performed on a dead body to determine the cause of death or identify any underlying medical conditions or injuries; a postmortem examination or necropsy (in animals)

37. The _____ scan showed a clear image of the patient's internal organs.

- n.* a diagnostic imaging technique used to produce detailed images of structures inside the body, typically by using X-rays, CT scans, or ultrasound

38. The _____ party strongly disagreed with the government's proposed legislation.

- n.* the act of disagreeing or resisting; the state of strong disagreement

39. The government tried to _____ the commercialization of this development.

- v.* to make something faster or earlier; to cause to develop or progress more quickly

ANSWERS: 33. scanned, 34. distributed, 35. circulatory, 36. autopsy, 37. tomography, 38. opposition, 39. accelerate

40. Let's try to _____ a bit of enthusiasm into your performance.
- v. to put a liquid such as a drug or other substance into a person's or an animal's body using a needle and syringe (= small tube)
41. The interests of the two countries _____.
- v. to hit something violently when moving
42. Please write to _____ your reservation.
- v. to support or establish the truth or certainty of something previously believed or suspected to be the case
43. He tried every possible treatment, including chemotherapy and _____ therapy.
- n. the energy that comes from a nuclear reaction in the form of rays, waves, or particles and that can be hazardous to health
44. The company specializes in both hardware and _____.
- n. a set of computer programs and associated documentation and data for doing particular computational jobs
45. The patient was diagnosed with a _____ in her lung.
- n. a mass of diseased tissue that forms when cells in the body divide and grow in an uncontrolled way
46. I need to buy a new coat _____ to organize my winter jackets.
- n. a framework or support structure used to hold or display objects; a set of interconnected shelves or compartments used for storage; a source of torture, distress, or mental anguish
47. Addicts often share dirty _____ putting themselves at risk for disease.
- n. a device used for injecting or withdrawing fluids from the body, consisting of a tube and a plunger that creates a vacuum or expels the fluid

ANSWERS: 40. inject, 41. collide, 42. confirm, 43. radiation, 44. software, 45. tumor, 46. rack, 47. syringes,

48. The doctor diagnosed him with a rare _____ that had no known cure.
- n.* a disorder or illness that affects the body or mind, often characterized by specific symptoms or abnormal functioning of organs or systems
49. Humans and apes have _____ anatomical structures.
- adj.* able to link the similarities or differences with others; similar or equivalent to someone or something
50. The _____ of tectonic plates can result in new mountain ranges, such as the Himalayas or the Alps.
- n.* an instance of two or more objects or entities crashing into each other, usually resulting in damage, impact, or conflict
51. Alzheimer's disease is characterized by the buildup of _____ plaques in the brain.
- n.* a type of protein that can accumulate abnormally in various tissues and organs in the body and is linked to various diseases, including Alzheimer's disease
52. There was a chemical _____ of the lime with the groundwater.
- n.* a response that reveals a person's feelings or attitude; (in chemistry) a process in which one or more substances are changed into others
53. The soldiers took cover in the dug-out _____ during the bombing.
- n.* a concrete shelter or underground room, typically for storing ammunition or protecting people from enemy fire; a hazard on a golf course; a large container for storing fuel
54. The path to a solid online _____ necessitates a high technical ability.
- n.* the fact or state that someone or something exists, occurs, or is present

ANSWERS: 48. disease, 49. comparable, 50. collision, 51. amyloid, 52. reaction, 53. bunker, 54. presence

55. The passenger grabbed for the _____ mask.
- n.* the chemical element with the symbol O that is present in air and water and is necessary for people, animals, and plants to live
56. The doctor carefully examined the _____ medical history.
- n.* a person who is receiving medical treatment, care, or attention from a healthcare professional, such as a doctor, nurse, or therapist; a personal quality or characteristic
57. This device is used to _____ brain cancer and other tumors.
- v.* to determine or distinguish the nature of a problem or an illness through a careful analysis
58. We must _____ a new system to streamline our workflow and increase efficiency.
- v.* to grow or expand; to improve or refine through a process of progress and refinement, often to achieve greater sophistication or complexity; to elaborate or add detail to something that is in the process of being created
59. Breast _____ is the most common type of cancer in women.
- n.* abnormal growth of cells that can invade and destroy surrounding tissues and organs; a disease characterized by the uncontrolled growth and spread of abnormal cells
60. We _____ the season's total trade deficit at \$50 billion.
- v.* to guess or calculate the cost, size, value, etc. of something
61. It is a basic instinct to _____ from a dangerous situation.
- v.* to leave by running away, especially out of fear or danger

ANSWERS: 55. oxygen, 56. patient's, 57. diagnose, 58. develop, 59. cancer, 60. estimated, 61. flee

62. The outermost electron shell of an _____ determines its chemical characteristics.
- n.* the smallest unit of ordinary matter that forms a chemical element, composed of a nucleus and one or more electrons bound to the nucleus
63. The body needs a certain amount of _____ to build and repair tissues.
- n.* a molecule made up of a long chain of amino acids, which is essential for the structure and function of the body's tissues
64. This remote _____ is rarely visited.
- n.* a particular location or place; a small round or roundish area, differing in color or feels from the surface around it
65. The doctor ordered an _____ to see if there was any damage to the bones.
- n.* a type of electromagnetic radiation that has a wavelength shorter than visible light allowing hidden objects such as bones and organs inside the body to be photographed
66. She _____ the door shut, angry at the person on the other side.
- v.* to shut a door or window noisily; to strike something violently or noisily
67. The _____ gun fired a bright light that helped the hunters find their prey in the dark.
- n.* a substance or device that makes something visible or distinguishable by leaving a visible mark or path behind it; a person or thing that traces, tracks, or follows; (of graphics) a tool or technique used to produce a precise outline of an image
68. _____ emission tomography, or PET, is a medical imaging technique.
- n.* an antiparticle of the electron with a positive charge that has the same mass as the electron but an opposite charge

ANSWERS: 62. atom, 63. protein, 64. spot, 65. X-ray, 66. slammed, 67. tracer, 68. Positron

69. The robot can accurately _____ construction material.

v. to specify or determine the exact position of someone or something

70. X-rays revealed a small tumor in his _____.

n. the organ inside the head that is responsible for one's movement, thought, memory, and feeling

71. I have a parrot as a _____.

n. an animal that you have at home as a companion and treated kindly

72. The _____ temperature recorded this summer was higher than average.

adj. the largest or greatest amount or value attainable or attained

73. The _____ material was carefully stored in a lead-lined container.

adj. emitting powerful and dangerous energy when the nuclei (= central parts) of atoms are broken up

74. The doctor injected _____ into his patient's veins.

n. a type of sugar that is found in plants, especially fruit, and is an essential energy source in living things

75. The dead body was in an advanced state of _____.

n. the process or state of rotting or decomposition by natural causes such as the action of bacteria and fungi; (verb) to rot or decompose through natural causes

76. My grandmother has _____ disease requires special care and attention from her caregivers.

n. a neurodegenerative disease that causes memory loss, cognitive decline, and behavioral issues; is the most common cause of dementia in older adults

ANSWERS: 69. locate, 70. brain, 71. pet, 72. maximum, 73. radioactive, 74. glucose, 75. decay, 76. Alzheimer's

77. The _____ of the magazine has been steadily declining.
- n.* the movement of blood through the body or of a fluid through a system; the number of copies of a newspaper or magazine that are sold
78. I always put a _____ mark next to the items on my grocery list after buying them.
- n.* a light, sharp, repetitive sound or action; a mark indicating that something is correct or has been done; any of two families of small parasitic arachnids with barbed proboscis
79. The _____ signs of a dishonest employee were missing files and constant delay.
- adj.* revealing or betraying information or evidence; serving as a sign or indicator of something
80. The fan _____ the air in the room quickly.
- v.* to move continuously or freely around a place or closed system
81. _____ exposure is the leading cause of lung cancer among non-smokers.
- n.* a chemical element with the atomic number 86 and symbol Rn that is a radioactive gas and comes from the decay of uranium in rocks and soil, and that is colorless, odorless, and tasteless and can cause cancer if inhaled in large amounts
82. The brain is an incredibly complex organ that controls the body's _____.
- n.* the purpose or use of an object, system, or process; a particular activity or operation that is designed to serve a specific purpose; a mathematical concept that describes a relationship between two sets of values, called the input and output sets; (verb) to operate or work in a specific way, or to perform a particular task or purpose

ANSWERS: 77. circulation, 78. tick, 79. telltale, 80. circulates, 81. Radon, 82. function

83. Hospitals must meet various standards to prevent nosocomial _____.
- n.* a condition in which pathogenic microorganisms or viruses have entered the body
84. The _____ facility at the university is one of the most advanced in the country.
- n.* a type of particle accelerator used to produce high-energy, charged particles for medical, scientific, or industrial purposes, often used in medical imaging or radiation therapy
85. The solar wind is composed almost entirely of electrons and _____.
- n.* a very small particle with a positive charge equal to the negative charge of an electron that forms part of the nucleus of all atoms
86. The customer on the Internet has to choose one from a formidable _____ of products.
- n.* a large group or collection of things or people, especially one that is impressive or attractive
87. The outermost _____ shell determines the chemical properties of an atom.
- n.* a tiny particle with the negative electrical charge
88. During the unloading, the container box _____ a clicking sound.
- v.* to give off or send out something such as light, heat, sound, gas, etc.
89. The election was a _____ success for the Whigs.
- adj.* worthy of attention because unusual or special
90. A _____ star is incredibly dense and has a strong gravitational pull.
- n.* a subatomic particle with no electric charge that is present in all atomic nuclei except those of ordinary hydrogen

ANSWERS: 83. infections, 84. cyclotron, 85. protons, 86. array, 87. electron, 88. emits, 89. remarkable, 90. neutron

91. The leaves of the fern were arranged in a _____ pattern.

- n.* a curve that coils around a central point and gets progressively farther away from it as it goes around

92. The _____ of people who do not own property is politically impotent.

- n.* a large amount of a substance with no definite shape or form; a large number of people or things grouped or crowded together

ANSWERS: 91. spiral, 92. mass